

**REMARKS/ARGUMENTS**

Claims 1-47 were pending in the present application. The present response amends claims 7, 9, 10, 13, 14, 17, 20, 23, 25, 27, 33, and 42, leaving pending in the application claims 1-47. Reconsideration of the rejections is respectfully requested.

**I. Rejection under 35 U.S.C. §102**

Claims 1-2, 5-17, 20-36, and 39-47 are rejected under 35 U.S.C. §102(e) as being anticipated by *Algots* (PN 6,192,064).

Applicants' claim 1 recites "a resonator including a pair of resonator reflecting surfaces disposed on either side of the discharge chamber for generating a laser beam," "a deformable third reflecting surface disposed between the pair of resonator reflecting surfaces," and "a processor for receiving a signal indicative of said bandwidth from said detector and controlling a surface contour of said deformable third reflecting surface to control said bandwidth in a feedback arrangement." *Algots* does not disclose such limitations.

*Algots* is directed to a system for fine control of laser wavelength (Title, abstract). *Algots* achieves "fine wavelength control" by "very fine and rapid positioning of an  $R_{MAX}$  mirror in a line-narrowing module." The mirror used for "fine wavelength control" is not deformed to control bandwidth, but is simply tilted to determine "the vertical angle of light reflecting in the resonance cavity" to provide "wavelength selection" (col. 2, lines 26-30; col. 3, line 18-col. 4, line 52). The "deformable mirror" of *Algots* does not have a controllable surface contour capable of controlling the bandwidth of the laser beam, but instead contains a "segmented" mirror where each segment has an associated tilt control. Each mirror can be tilted at "the required angle" in order to obtain the proper reflection angle for each portion of the laser beam (col. 8, line 65-col. 9, line 24). The advantage to using a segmented mirror instead of a single mirror to obtain the proper reflection angle is that "individual segmented mirrors are much lighter" and "much faster control [is] possible" (col. 9, lines 10-12). The ability to quickly and precisely control wavelength can minimize the effects of "chirp," or rapid shifts in wavelength due to factors such as thermal and acoustic effects (col. 8, lines 33-63). *Algots*, however, does not disclose a deformable mirror having a surface contour capable of controlling bandwidth as set forth in Applicants' claim 1. Indeed, *Algots* teaches a very different method of controlling bandwidth

using a “grating assembly having a bidirectional control unit attached to it” (see col. 3, lines 18-50; Fig. 2).

As *Algots* does not disclose all limitations of claim 1, *Algots* cannot anticipate Applicants’ claim 1. Independent claims 7, 13, 17, 23, 25, 27, 33, and 42 recite similar limitations not disclosed by *Algots*, including for example “a third reflecting surface disposed between the pair of resonator reflecting surfaces and having a surface contour which is deformable in order to control the bandwidth of the laser beam” and “a processor for receiving a signal indicative of said at least one laser system parameter from said detector and controlling a surface contour of said deformable third reflecting surface in a feedback arrangement in order to control at least the bandwidth of the laser beam.” Claims 2, 5-6, 8-12, 14-16, 20-22, 24, 26-32, 34-36, 39-41 and 43-47 depend from these claims and therefore also are not anticipated by *Algots*. Applicants therefore respectfully request that the rejection with respect to claims 1-2, 5-17, 20-36, and 39-47 be withdrawn.

## **II. Rejection under 35 U.S.C. §103**

Claims 3-4, 18-19, 37-38, and 43-44 are rejected under 35 U.S.C. §103(a) as being obvious over *Algots*. Claims 3-4, 18-19, 37-38, and 43-44 depend from independent claims 1, 7, 13, 17, 23, 25, 27, 33, and 42. As discussed above, *Algots* uses a mirror, or array of mirror segments, before the resonator grating in order to control the wavelength of a laser beam by quickly and precisely tilting the mirror(s) by the appropriate amount. *Algots* does not teach or suggest deforming the surface contour of the mirror in order to control the bandwidth of the laser beam. Further, there is no motivation in *Algots* to attempt to control bandwidth by deforming the surface contour of an intermediate mirror, as the bandwidth in *Algots* is controlled by the resonator grating element. There also is no suggestion that a mirror having a deformable surface contour could be used to control bandwidth in two directions in a resonator with any likelihood of success. As such, *Algots* cannot render obvious independent claims 1, 7, 13, 17, 23, 25, 27, 33, and 42. Claims 3-4, 18-19, 37-38, and 43-44 depend from these claims and also should not be rendered obvious by *Algots*. Applicants therefore respectfully request that the rejection with respect to claims 3-4, 18-19, 37-38, and 43-44 be withdrawn.

**III. Amendment to the claims**

The amendments to the claims are made to clarify that which Applicants regard as the invention, and are not intended to alter the scope of the claims or limit any equivalents thereof. The amendments are fully supported by the specification, and where possible use language taken from pending claims. The newly amended claims do not add new matter to the specification.

**IV. Conclusion**

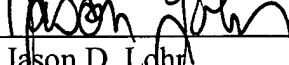
In view of the above, it is respectfully submitted that the application is now in condition for allowance. Reconsideration of the pending claims and a notice of allowance is respectfully requested.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed, or which should have been filed herewith, (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-1703, under Order No. LMPY-15210. **A duplicate copy of the transmittal cover sheet attached to this Response to Office Action Mailed May 7, 2003, is sheet is provided herewith.**

Respectfully submitted,

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